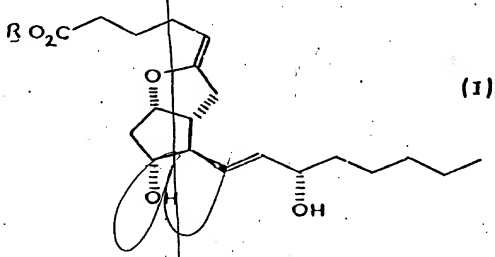
CM What we claim is:

1. A compound of the formula



(I)

wherein R is hydrogen or a pharmacologically acceptable cation.

2. A compound as claimed in claim 1 wherein R is hydrogen.

3. A compound as claimed in claim 1 wherein R is a pharmacologically acceptable cation.

4. A compound as claimed in claim 1 wherein R is an alkali metal cation.

5. A compound as claimed in claim 3 wherein R is an alkaline earth metal cation.

6. A compound as claimed in claim 3 wherein R is an organic base cation.

7. A compound as claimed in claim 3 wherein R is the sodium cation.

8. (5-Z)-5,6-Didehydro-9-deoxy-6,9α-epoxyprostaglandin $F_{1\alpha}$

9. ~~Synthetic (5-Z)-5,6-Didehydro-9-deoxy-6,9α-epoxyprostaglandin $F_{1\alpha}$~~ Isolated

10. A solution of (5-Z)-5,6-Didehydro-9-deoxy-6,9α-epoxyprostaglandin $F_{1\alpha}$ substantially free from organic material of biological origin.

11. A solution of (5-Z)-5,6-Didehydro-9-deoxy-6,9α-epoxyprostaglandin $F_{1\alpha}$

of alkaline pH substantially free from organic material of biological origin.

12. A solution of (5 Z)-5,6-Didehydro-9-deoxy-5,9α-epoxyprostaglandin $F_{1\alpha}$ in an organic solvent.

13. A solution as claimed in claim 12 wherein the solvent is acetone.

14. (5 Z)-5,6-Didehydro-9-deoxy-6,9α-epoxyprostaglandin $F_{1\alpha}$ sodium salt.

15. Crystalline (5 Z)-5,6-Didehydro-9-deoxy-6,9α-epoxyprostaglandin $F_{1\alpha}$ sodium salt.

16. Crystalline (5 Z)-5,6-Didehydro-9-deoxy-6,9α-epoxyprostaglandin $F_{1\alpha}$ sodium salt coated with sodium carbonate.

17. (5 Z)-5,6-Didehydro-9-deoxy-6,9α-epoxyprostaglandin $F_{1\alpha}$ sodium salt substantially free from an ester of said prostaglandin.

18. A process for preparing (5 Z)5,6-Didehydro-9-deoxy-6,9α-epoxyprostaglandin $F_{1\alpha}$ sodium salt comprising the reaction of 5-iodo-9-deoxy-6,9-epoxyprostaglandin $F_{1\alpha}$ methyl ester with sodium methoxide; and reaction of the resulting prostaglandin ester with aqueous sodium hydroxide to yield the desired product in crystalline form.

19. A process as claimed in claim 18 wherein the sodium salt product is washed with aqueous sodium hydroxide and air-dried to provide a coating of sodium carbonate upon the crystals of the sodium prostaglandin salt.

20. A pharmaceutical formulation comprising a compound as defined in claim 1 in association with a pharmaceutically acceptable carrier therefor.

21. A formulation as claimed in claim 20 wherein the carrier is a liquid.

22. A formulation as claimed in claim 21 wherein the carrier is an alkaline aqueous solution.

23. A formulation as claimed in either claim 21 or 22 which is a sterile parenterally acceptable injectable solution.

24. A formulation as claimed in claim 21 wherein the carrier comprises Tris buffer.

25. A method for the treatment or prophylaxis of thrombosis in a mammal or a mammalian tissue comprising the administration to the mammal or the tissue of a compound as defined in claim 1.

26. A method for inducing vasodilation in a mammal comprising the administration to the mammal of a compound as defined in claim 1.

27. A method for the prophylaxis or treatment of gastric lesions in a mammal comprising the administration to the mammal of a compound as defined in claim 1.

28. A method for the promotion of wound healing in a mammal comprising the administration to the mammal of a compound as defined in claim 1.

29. A method as claimed in any of claims 25 to 28 wherein the compound of claim 2 is a pharmaceutically acceptable solution of the anion of (5 Z)-5,6-Didehydro-9-deoxy-6,9α-epoxyprostaglandin $F_{1\alpha}$.

30. A method as claimed in any of claims 25 to 28 wherein the compound of claim 2 is (5 Z)-5,6-Didehydro-9-deoxy-6,9α-epoxyprostaglandin $F_{1\alpha}$ sodium salt.

31. A method as claimed in any of claims 25 to 30 wherein the compound is administered parenterally.

32. A method as claimed in claim 31 wherein the compound is administered intravenously.

33. A method as claimed in any of claims 25 to 32 wherein the c compound is administered as a solution thereof.

34. A method as claimed in any of claims 25 to 33 wherein the compound is administered in an amount of from 0.01 to 200 mg per kilogram bodyweight of the mammal.